

WHAT IS CLAIMED IS

5

1. A dynamic traffic control method that controls traffic in a radio network system where a radio network controller causes a plurality of radio base stations to change radio
10 outputs, comprising:

a step of measuring a channel utilization rate of each of cells of the radio base stations every predetermined period;

a step of predicting whether the
15 channel utilization rate of a first cell of the cells reaches an implementation level, at which radio output control over the first cell is required, in a next period based on a movement of the channel utilization rate in the past if
20 the channel utilization rate of the first cell is at a warning level; and

a step of reducing the radio output of the first cell and increasing the radio output of a second cell adjacent to the first cell if
25 the channel utilization rate of the first cell is predicted to reach the implementation level.

30

2. A dynamic traffic control method that controls traffic in a radio network system where a radio network controller causes a plurality of radio base stations to change radio
35 outputs, comprising:

a step of measuring a channel utilization rate of each of cells of the radio

base stations every predetermined period;

5 a step of predicting time required for the channel utilization rate of a first cell of the cells to reach an implementation level, at which radio output control over the first cell is required, based on a movement of the channel utilization rate in the past if the channel utilization rate of the first cell is at a warning level; and

10 a step of reducing the radio output of the first cell and increasing the radio output of a second cell adjacent to the cell according to the predicted time.

15

3. The dynamic traffic control method as claimed in claim 1, wherein the radio outputs of the first cell and the second cell are changed by sending one instruction for each of the first cell and the second cell to the corresponding radio base stations from the radio network controller.

25

4. The dynamic traffic control method as claimed in claim 2, wherein the radio outputs of the first cell and the second cell are changed by sending one instruction for each of the first cell and the second cell to the corresponding radio base stations from the radio network controller.

35

5. The dynamic traffic control method
as claimed in claim 1, wherein the radio outputs
5 of the first cell and the second cell are
gradually changed by sending a plurality of
instructions for each of the first cell and the
second cell to the corresponding radio base
stations from the radio network controller.
10

6. The dynamic traffic control method
15 as claimed in claim 2, wherein the radio outputs
of the first cell and the second cell are
gradually changed by sending a plurality of
instructions for each of the first cell and the
second cell to the corresponding radio base
20 stations from the radio network controller.

7. The dynamic traffic control method
25 as claimed in claim 1, further comprising:
a step of counting a number of areas
included in each of the cells of the radio base
stations every predetermined period; and
30 a step of changing the warning level or
the implementation level according to the number
of areas included in the corresponding cell.

35

8. The dynamic traffic control method

as claimed in claim 2, further comprising:

a step of counting a number of areas included in each of the cells of the radio base stations every predetermined period; and

5 a step of changing the warning level or the implementation level according to the number of areas included in the corresponding cell.

10

9. The dynamic traffic control method as claimed in claim 7, wherein the warning level or the implementation level is lowered if the
15 number of the areas included in the corresponding cell is large.

20

10. The dynamic traffic control method as claimed in claim 8, wherein the warning level or the implementation level is lowered if the number of the areas included in the
25 corresponding cell is large.

30

11. The dynamic traffic control method as claimed in claim 1, further comprising:

a step of counting a number of areas included in each of the cells of the radio base stations every predetermined period; and

35 a step of applying weighting to the movement of the channel utilization rate in the past according to the number of areas included

in the corresponding cell.

5

12. The dynamic traffic control method as claimed in claim 2, further comprising:

10 a step of counting a number of areas included in each of the cells of the radio base stations every predetermined period; and

a step of applying weighting to the movement of the channel utilization rate in the past according to the number of areas included in the corresponding cell.

15

13. The dynamic traffic control method as claimed in claim 11, wherein the weighting of movement of the channel utilization rate in the past is increased if the number of the areas of the corresponding cell is large.

25

14. The dynamic traffic control method as claimed in claim 12, wherein the weighting of movement of the channel utilization rate in the past is increased if the number of the areas of the corresponding cell is large.

35

15. The dynamic traffic control method

as claimed in claim 9, further comprising:

a step of predicting a traffic change
in advance; and

a step of changing the warning level or
5 the implementation level according to the
predicted traffic change.

10

16. The dynamic traffic control method
as claimed in claim 10, further comprising:

a step of predicting a traffic change
in advance; and

15 a step of changing the warning level or
the implementation level according to the
predicted traffic change.

20

17. The dynamic traffic control method
as claimed in claim 13, further comprising:

25 a step of predicting a traffic change
in advance; and

a step of applying weighting to the
movement of the channel utilization rate in the
past according to the predicted traffic change.

30

18. The dynamic traffic control method
as claimed in claim 15, wherein the traffic
35 change is predicted based on the day of the week
or time of the day.

19. A radio network controller device
5 that controls traffic by causing a plurality of
radio base to change radio outputs, comprising:
a measuring unit that measures a
channel utilization rate of each of cells of the
radio base stations every predetermined period;
10 a predicting unit that predicts whether
the channel utilization rate of a first cell of
the cells reaches an implementation level, at
which radio output control over the first cell
is required, in a next period based on a
15 movement of the channel utilization rate in the
past if the channel utilization rate of the
first cell is at a warning level; and
a radio output changing unit that
reduces the radio output of the first cell and
20 increases the radio output of a second cell
adjacent to the first cell if the channel
utilization rate of the first cell is predicted
to reach the implementation level.

25

20. A radio network controller device
that controls traffic by causing a plurality of
30 radio base to change radio outputs, comprising:
a measuring unit that measures a
channel utilization rate of each of cells of the
radio base stations every predetermined period;
a predicting unit that predicts time
35 required for the channel utilization rate of a
first cell of the cells to reach an
implementation level, at which radio output

control over the first cell is required, based on a movement of the channel utilization rate in the past if the channel utilization rate of the first cell is at a warning level; and

- 5 a radio output changing unit that reduces the radio output of the first cell and increasing the radio output of a second cell adjacent to the cell according to the predicted time.